



Seattle Department of Transportation

City of Seattle Bicycle Master Plan

TooleDesignGroup

Public Meetings
December 2006



The Instructions:

- Be visionary & practical
- Initiate cultural change
- Listen to and involve the public
- Be innovative
- Connect bicycle facilities
- Focus on streets

The Goals:

- 1) Increase use of bicycling in Seattle for all trip purposes
- 2) Improve safety of bicyclists



The Vision:

- Create an interconnected network of on- and off-road bicycling facilities
- Affect cultural change to achieve implementation



The Plan:

- Bicycle facilities on 58 percent (274 mi.) of Seattle's arterial streets
- A 203-mile system of signed bicycle routes, connecting all parts of Seattle
- A bicycle facility within $\frac{1}{4}$ mile of 95 percent of Seattle residents
- BIG ideas
- Strategies for implementation

Presentation Overview

1. Bicycle Master Plan Development
2. Draft Plan Recommendations
3. Questions
4. Instructions for Map/Sign Stations



Major Work Products and Timeline

- Where we've been:
 - Data Collection and Fieldwork —Spring/Summer 2006
 - Existing Conditions Memo — Fall 2006
 - Preliminary Recommendations — Fall 2006
- Where we're going:
 - Draft Plan — December 2006/January 2007
 - Design guidelines —Spring 2007
 - Final Plan —Spring 2007

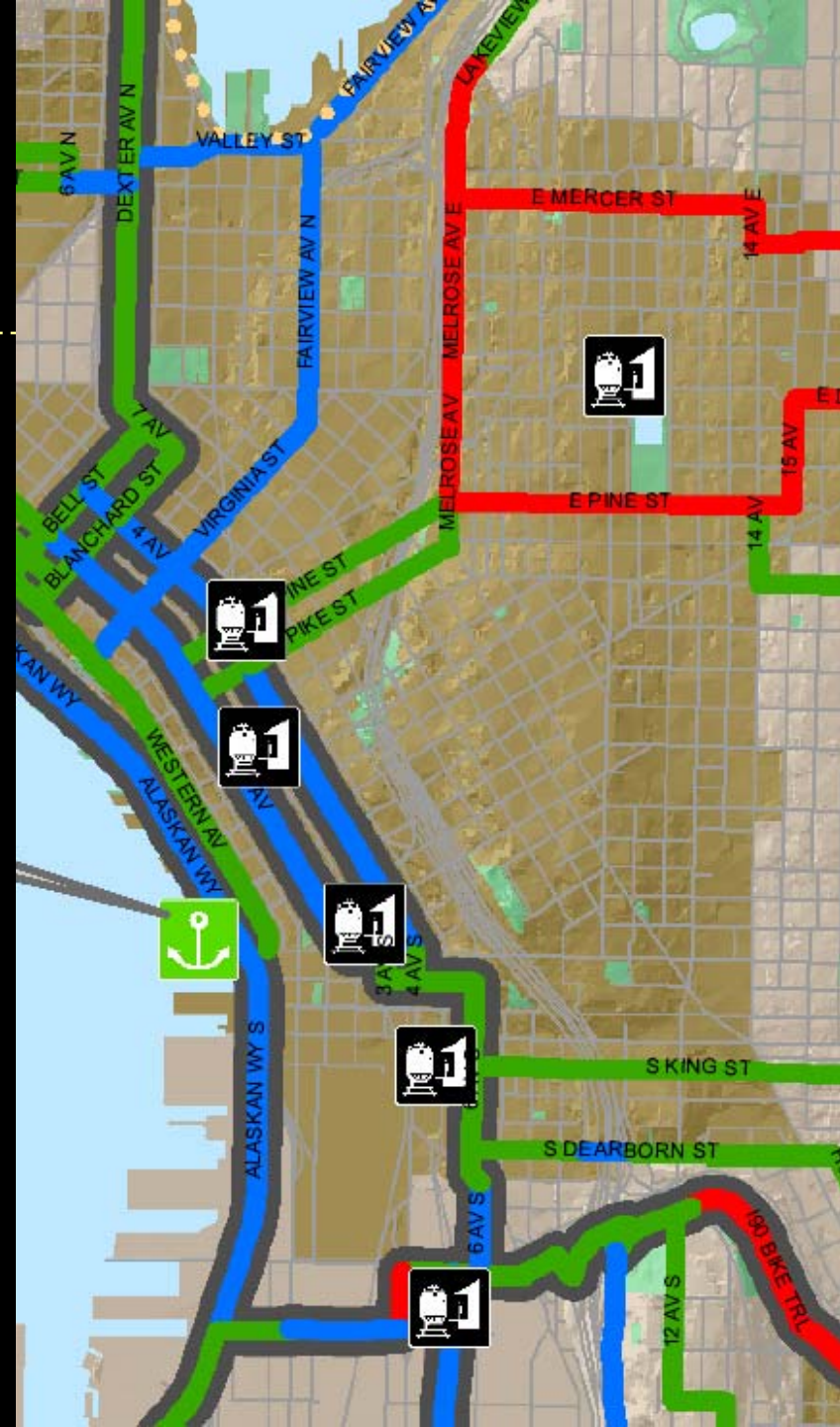
Opportunities for Input

Tonight: Maps, Routes, Signs

End of December: Text on SDOT Website

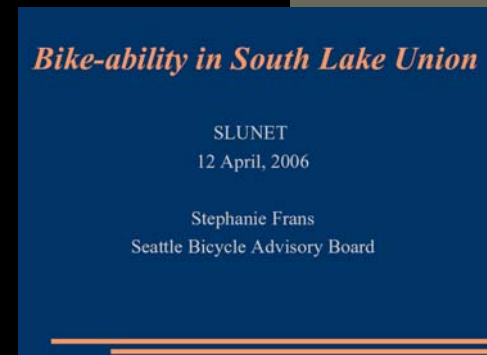
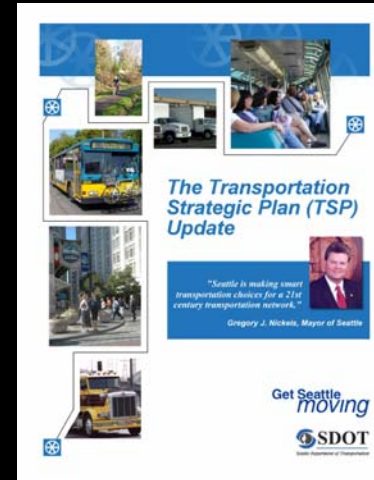


Plan Development



Review of Existing Plans and Data

- Seattle Transportation Strategic Plan
- Seattle Comprehensive Plan
- Urban Trails Plan
- “Bridging the Gap” Funding Initiative
- Seattle Bike Map
- Seattle Bicycle Facilities Collaborative Report
- Urban Village Transit Network
- Bands of Green
- Vision 2030 Plan-Puget Sound Regional Council
- Left by the Side of the Road Puget Sound Regional Bicycle Network Study
- Southeast Transportation Study Existing Conditions Report
- Mercer Corridor Study
- Viaduct Study South Lake Union Transportation Study
- University Area Transportation Study
- Seattle Open Space Plan
- Street Design Guidelines
- Relevant sections of Seattle Traffic Code
- 2003 Regional Bicycle and Pedestrian Implementation Strategy for the Central Puget Sound Region (Puget Sound Regional Council)
- 1999 Puget Sound Household Travel Survey (Puget Sound Regional Council)



Public Input



Bicycle Master Plan
Public meeting
August 29, 2006

Public Input

- Over 450 people attended August public meeting
- 1,584 responses to online questionnaire
- Regular meetings with Citizens Advisory Board



Seattle Bicycle Master Plan Questionnaire - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Seattle Bicycle Master Plan Questionnaire

1. Helping To Improve Biking in Seattle!

This questionnaire is one component of public involvement for developing a Bicycle Master Plan for the City of Seattle!

If you wish to be informed of community meetings and progress of the Bicycle Master Plan, please fill out the contact information below for a meeting held Tuesday, August 29 from 6:30-9:30 pm at Gould Hall, UW Campus, 3949 15th Ave NE. More details are provided on the next page.

Information collected will be confidential and will be used solely for the Bicycle Master Plan process.

1. Based on your experience, which Seattle streets are best for bicycling? (Be as specific as possible about the area you are referring to, such as NE and East Greenlake Way N.)

Street #1

Street #2

Street #3

Street #4

Street #5

2. Which Seattle streets are worst for bicycling? Please be as specific as possible.

Street #1

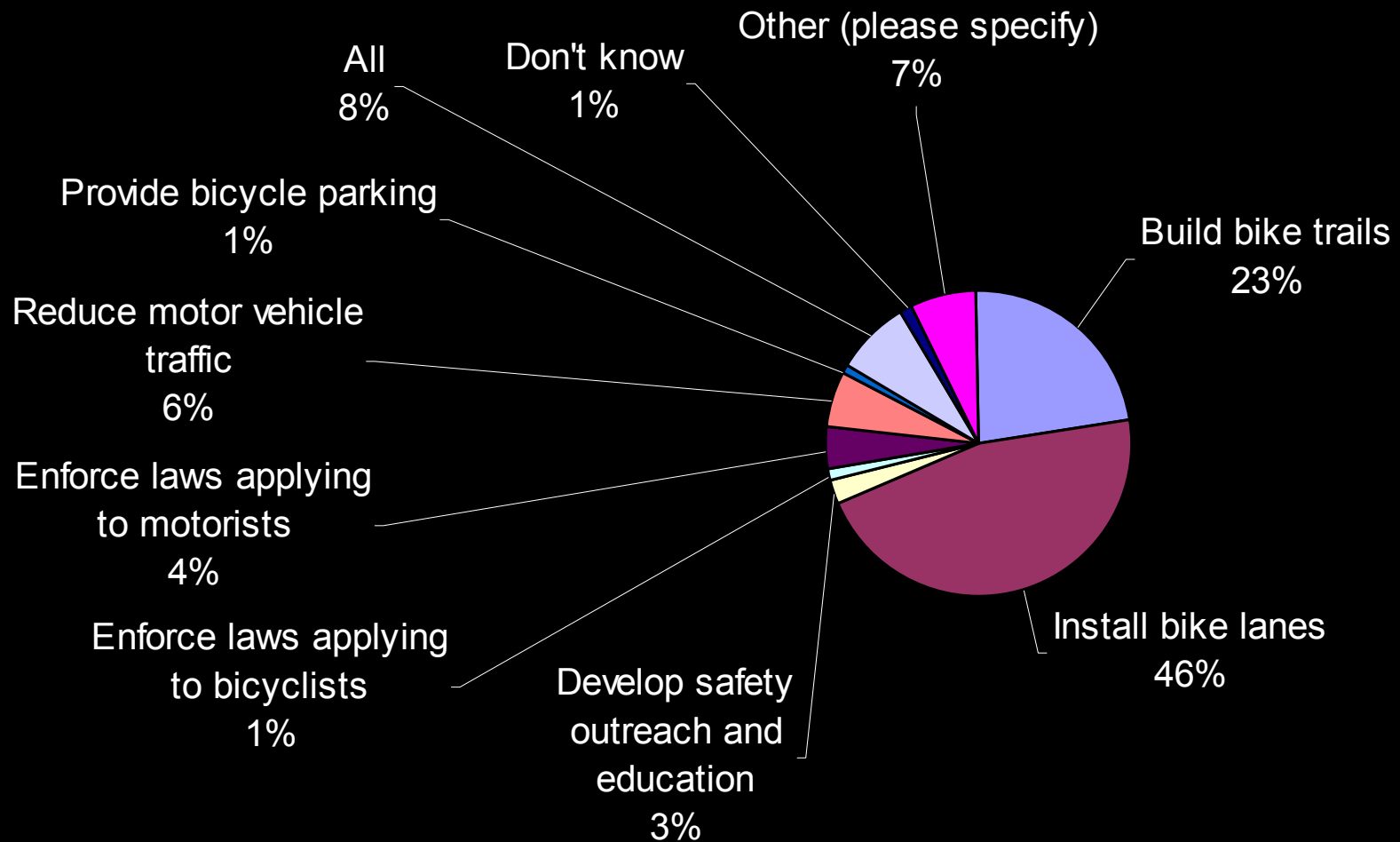
Street #2

Street #3

Street #4

Street #5

Which factors would do the most to encourage bicycling?



Fieldwork

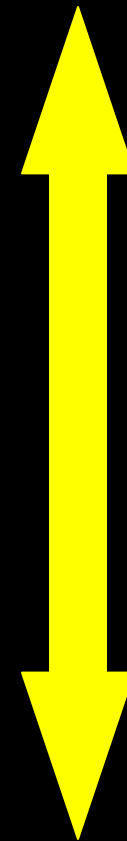


Fieldwork



How Do We Develop Bicycle Facilities?

- Add Striping
- Lane Diet
- Road Diet
- Adjust Parking Operations
- Pave Shoulder
- Move Curb
- Remove Parking
- Road Widening/Reconstruction



Straightforward

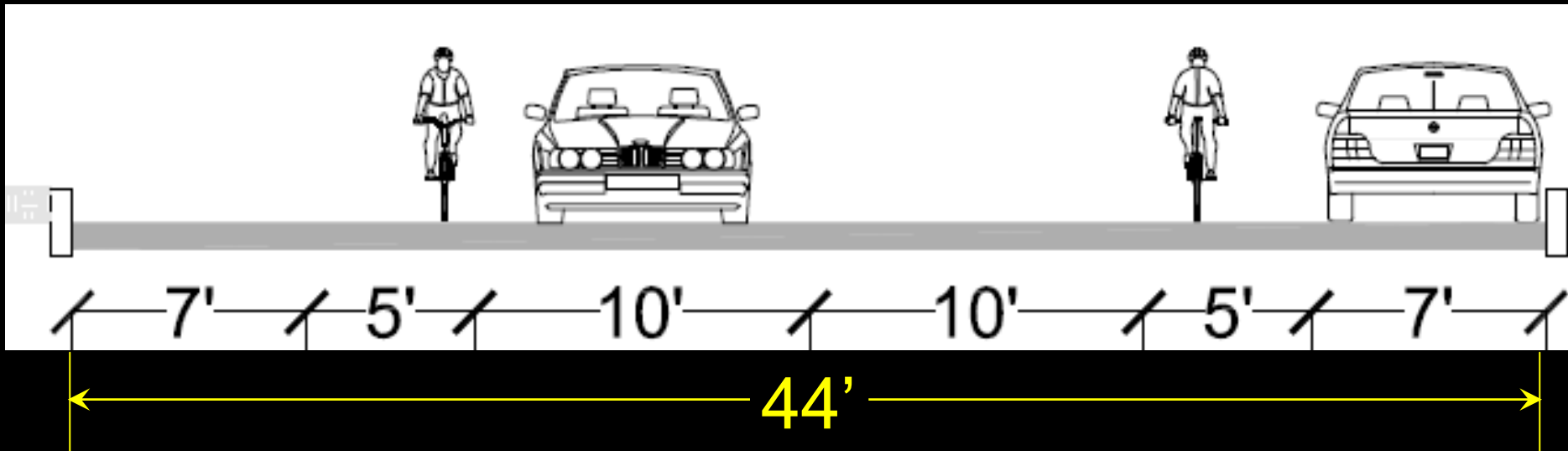
More Complex

Engineers “Rule Book”

AASHTO Striping Requirements

Plan Recommendations Utilize Flexibility Contained Within AASHTO Requirements for Urbanized Area

- 10' Minimum Travel Lane Widths
- 10-16' Center Turn Lane Widths
- 7' Minimum Parking Lane Width
- 5' Minimum Bike Lane Width against parking and curbs



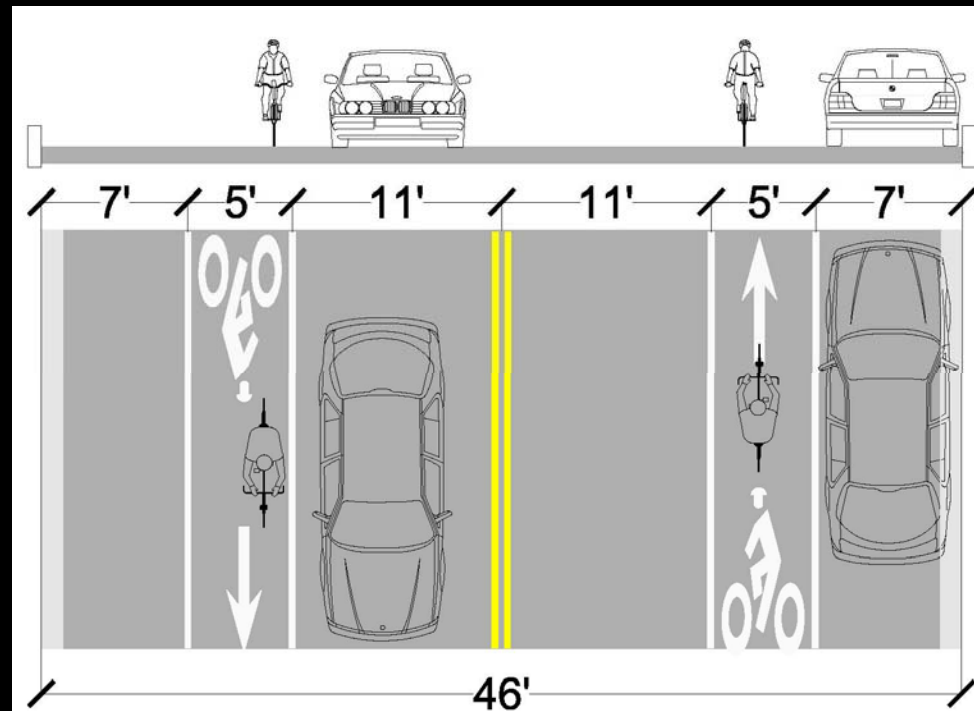
Arterial Bicycle Lanes

46' Example

Add Striping

- Stripe Parking
- Stripe Bike Lanes

No Other Changes Necessary



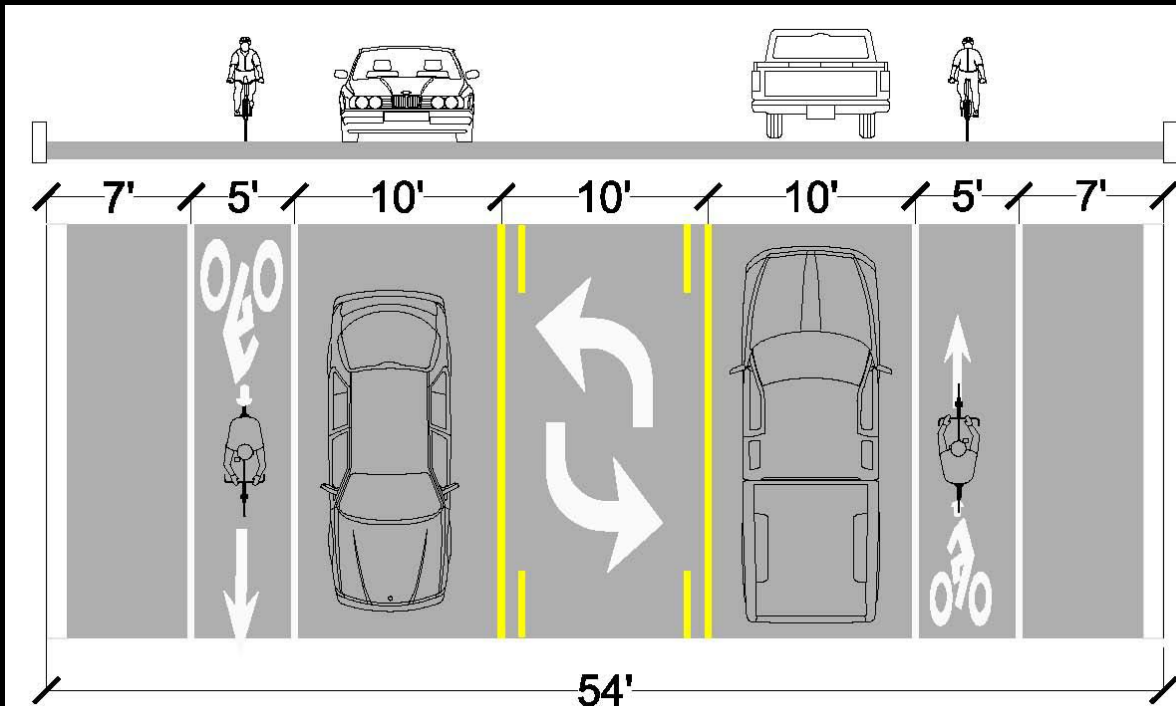
Arterial Bicycle Lanes

54' Example

- Stripe Parking
- Stripe Bike Lanes

55'-59' Streets

- Widen Travel Lanes up to 11'
- Widen Bike Lane up to 6'
- Widen CTL up to 14'



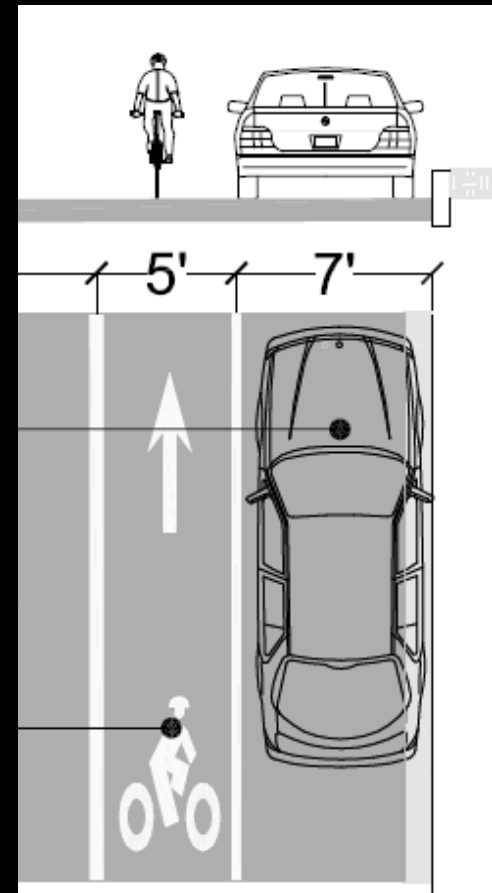
Bicycle Lane Striping Using Minimum Lane Widths

Advantages

- Allows maximum use of limited right-of-way
- Encourages slower operating speeds
- Shortens pedestrian crossing distances
- Minimizes impervious surfaces
- Encourages parking close to curb

Disadvantages

- Places Bicyclists in Door Zone
- Trucks don't fit in parking lanes
- Buses and Trucks are squeezed in travel lanes (7–9' widths with mirrors)



Shared Lane Markings (Sharrows)



Arterial Shared Lanes 40' Streets

- Stripe Parking
- Add Shared Lane Marking



38'-39' Streets

- Narrow Travel Lanes to 12'

41'-43' Streets

- Widen Travel Lanes up to 15'



Arterial Shared Lanes

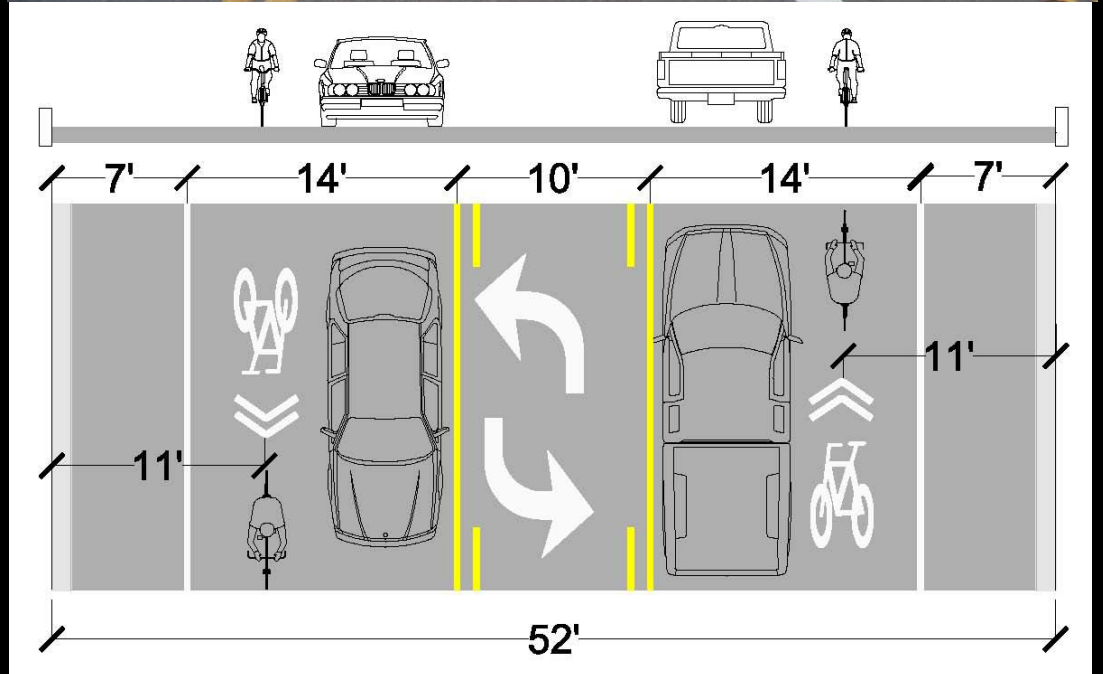
50'-52' Streets

Climbing Lanes

- Narrow Travel Lanes to 10'
- Stripe Bicycle Lane in uphill direction
- Add Shared Lane Marking in downhill direction

Bike Lanes 2 Sides

- Eliminate CTL
- Add Medians for Peds



Arterial Climbing Lanes 40' Streets

Climbing Lanes

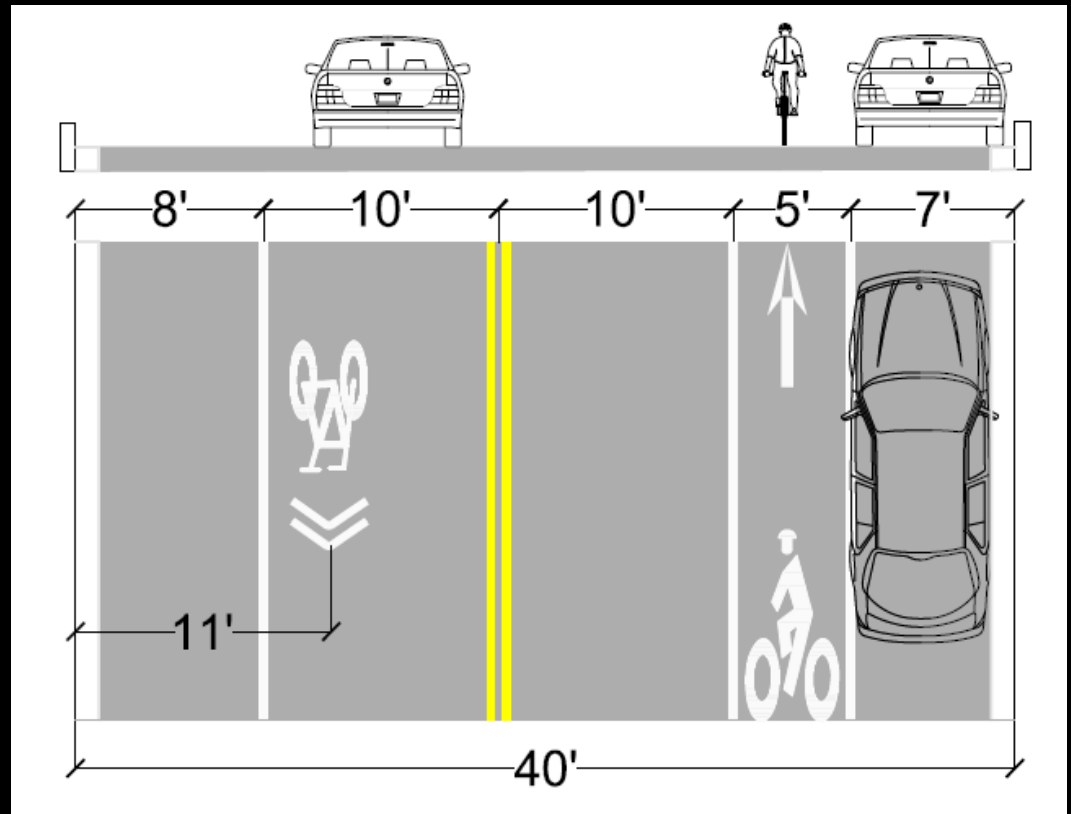
- Narrow Travel Lanes to 10'
- Stripe Parking
- Stripe Bicycle Lane in uphill direction
- Add Shared Lane Marking in downhill direction

Eliminate Parking One Side

- Stripe Bike Lanes 2 Sides

41'-43' Streets

- Widen Downhill Travel Lane up to 13'



Code of Washington 46.61.620

Opening and closing vehicle doors

“No person shall open the door of a motor vehicle on the side adjacent to moving traffic unless and until it is reasonably safe to do so, ...”



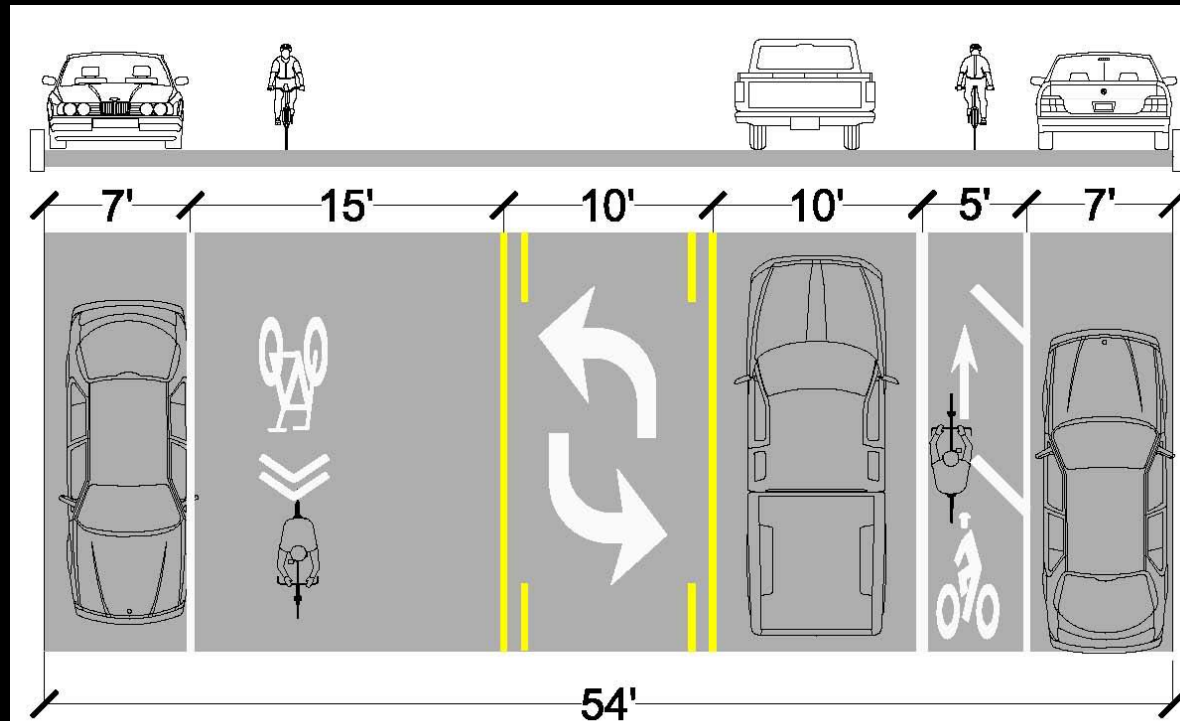
Arterial Striping Alternatives

Steep Roads

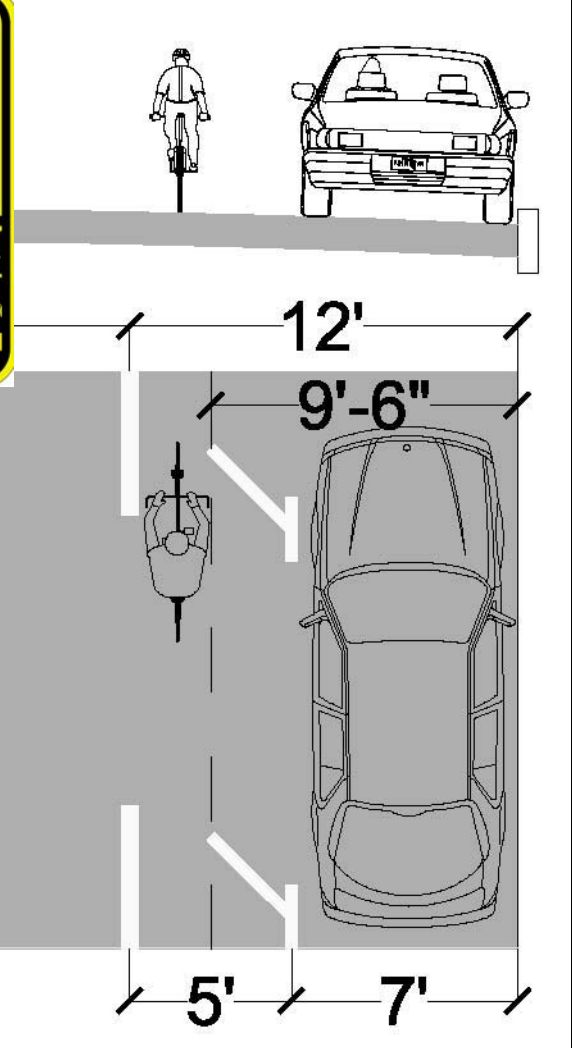
- Convert Downhill Bike Lane to Wide Outside Lane

High Parking Turnover

- Convert Bike Lane to Wide Outside Lane
- Hatch Door Zone



Wide Outside Lanes/Rush Hour Restricted Parking Lanes









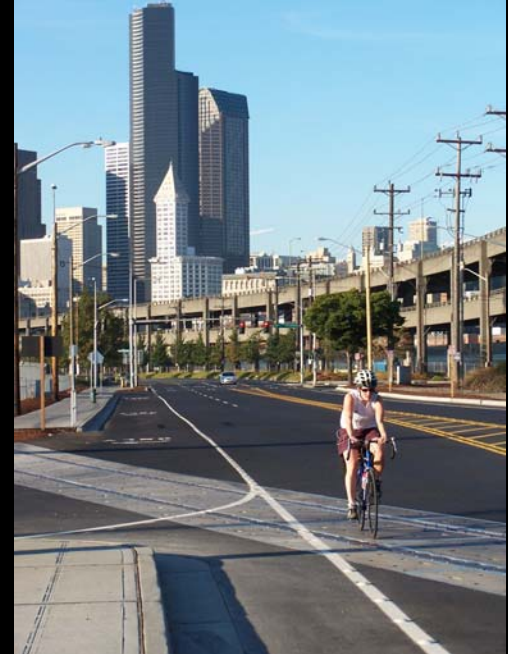
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Draft Plan Overview

- Chapter 1. Introduction
- Chapter 2. Bicycle Facility Network
- Chapter 3. Supporting Bicycle Facilities
- Chapter 4. Partnerships for Education, Enforcement, and Encouragement
- Chapter 5. Funding and Implementation
- Appendices



1. Introduction

Implementing this Plan over the next 10 years will provide:

- Bicycle facilities on 58 percent (274 miles) of Seattle's arterial streets
- A 203-mile system of signed bicycle routes, connecting all parts of Seattle
- 50 percent more (21 additional miles of new) multi-use trails
- A bicycle facility within $\frac{1}{4}$ mile of 95 percent of Seattle residents
- Maintenance schedules for on-road and off-road bicycle facilities
- Partnerships to improve bicyclist safety increase bicycling throughout Seattle
- A signed route within $\frac{1}{4}$ mile of 72 percent of Seattle's schools

Bicycling: A Key Component of the Multi-Modal Transportation System

- “Bridging the Gap”
- Seattle Complete Streets Policy
- Relationship to other Plans
 - Climate Action Plan
 - City Comprehensive Plan
 - Transportation Strategic Plan



1. Introduction

Guiding Principle: “To design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users; pedestrians, bicyclists, transit riders, and disabled users, as well as cars and trucks.”

--City of Seattle Complete Streets Policy, August 7, 2006.

2. Bicycle Facility Network

A Bicycle Facility Network for Everyone



Major Activity Centers and Key Connections

- Activity Centers
- Connections
- Existing Conditions
- Levels of Bicycling

CITY OF SEATTLE

CONCEPTUAL MAP OF MAJOR BICYCLE DESTINATIONS AND KEY CONNECTIONS

DRAFT 11/30/06



This is a conceptual map showing anticipated levels of bicycle activity in major corridors throughout Seattle. Major activity centers include hub urban villages, transit station areas, major parks, and major neighborhood commercial areas. Key connections represent bicycle transportation corridors between activity centers. These connections include a new bicycle facility on WA 520, a trail connection between the Chief Seattle Trail and Cooverton, and the completed Ship Canal Trail. The color of the lines on each corridor represent the quality of existing bicycle conditions.

Legend

Anticipated Levels of Bicycle Activity

- High
- Medium
- Low

Estimated Quality of Existing Bicycle Connection

- Good
- Fair
- Poor
- Does Not Exist

Major Activity Center

- Road

Seattle City Limit

- Park
- Urban Center, Urban Center Village, or Hub Urban Village

0 0.5 1 2 3 4 Miles

2. Bicycle Facility Network

“As an experienced cyclist, I feel relatively safe, but Seattle has a long way to go when it comes to making bicycling safe for new riders...”

—Seattle Resident

Existing Bicycle Facilities

- 25 miles of on-road bicycle facilities
- 40 miles of multi-use trails



Urban Trails System

- Multi-Use Trails
- On-road connections (key bicycle lanes and bicycle routes)



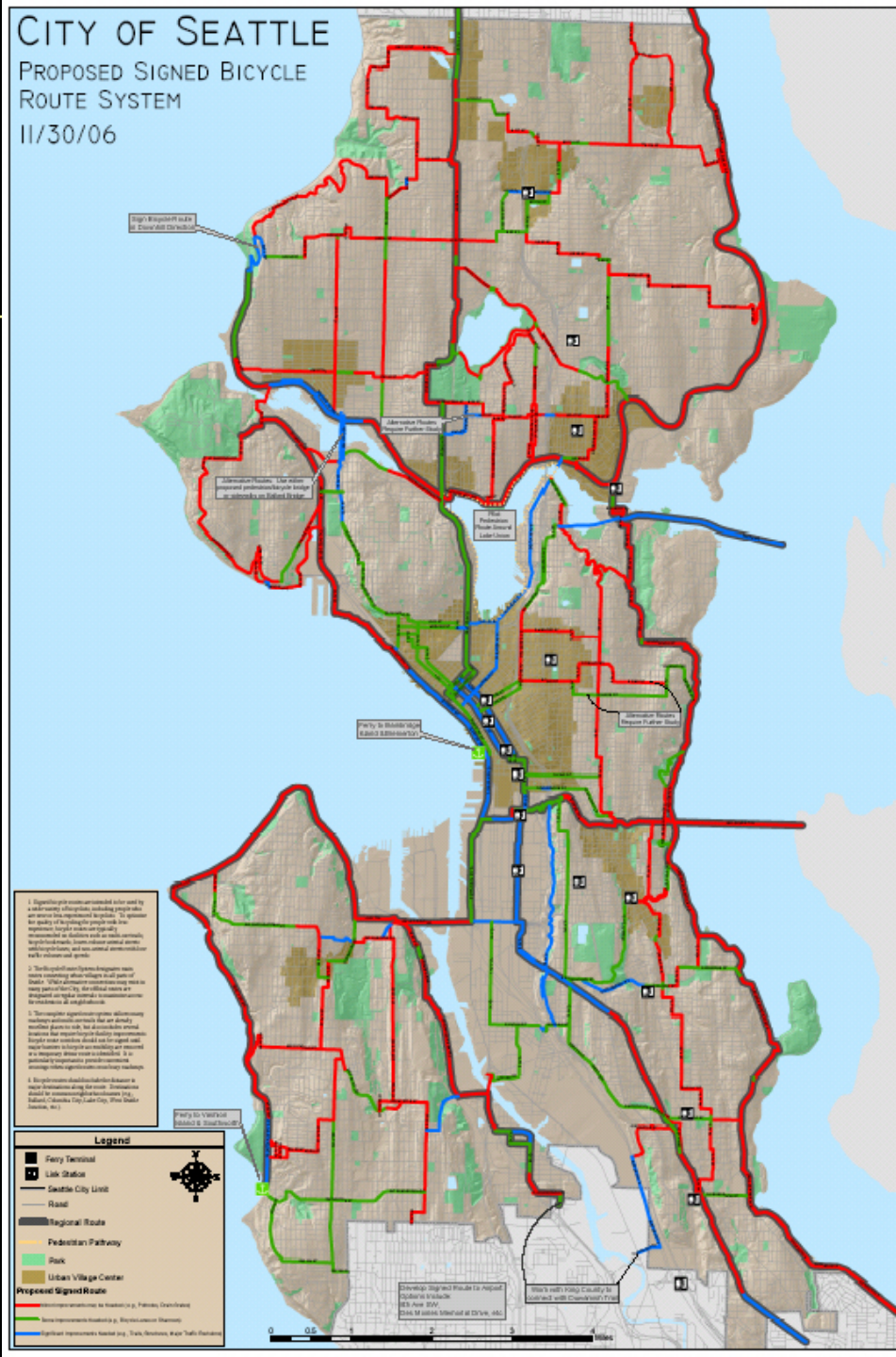
2. Bicycle Facility Network

“I would love to bike to the store and to other errands, but the traffic, even here in West Seattle, scares me. Also I have two small children, and I really don't want to jeopardize them...I really like the idea of making bike boulevards of quiet residential streets.”

- Seattle resident

Signed Bicycle Routes

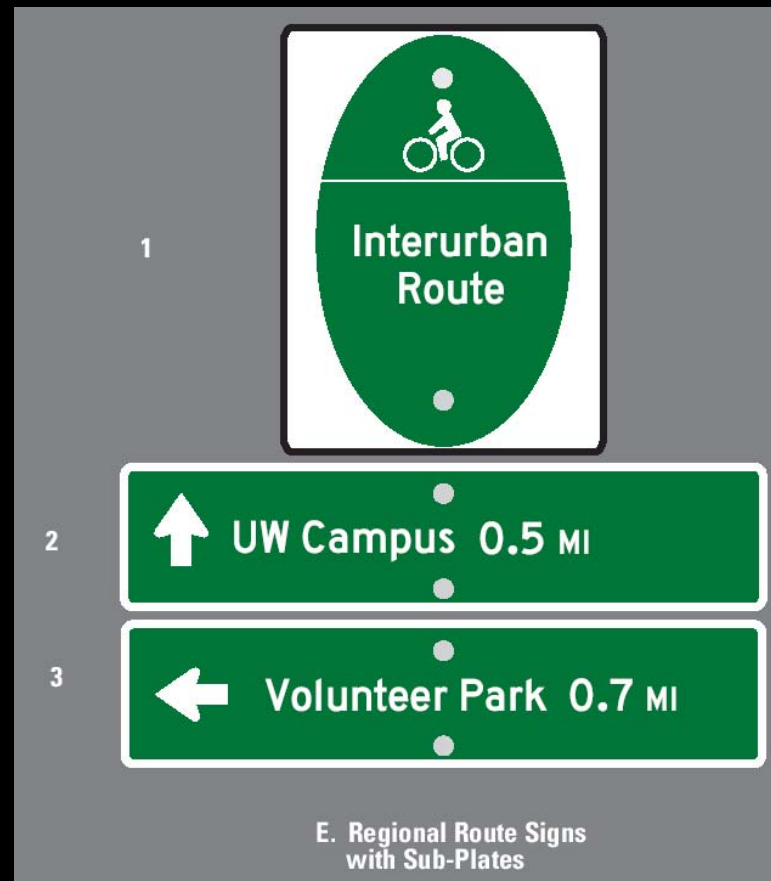
- Bicycle Lanes on low-volume arterial streets
- Multi-Use Trails
- Bicycle Boulevards
- Non-arterial street connections
- Serves all parts of Seattle and connects all Urban Villages



Sign Design—Draft City route signs



Sign Design—Draft regional route signs



2. Bicycle Facility Network

“I like to bicycle on arterial roads because they are most direct.”

--Seattle Resident

2. Bicycle Facility Network

“I generally ride 17 to 20 miles per hour, and appreciate on-street facilities that don’t force me into being a pedestrian or make me stop all the time.”

—Seattle Resident

Arterial Roadways with Bicycle Facilities

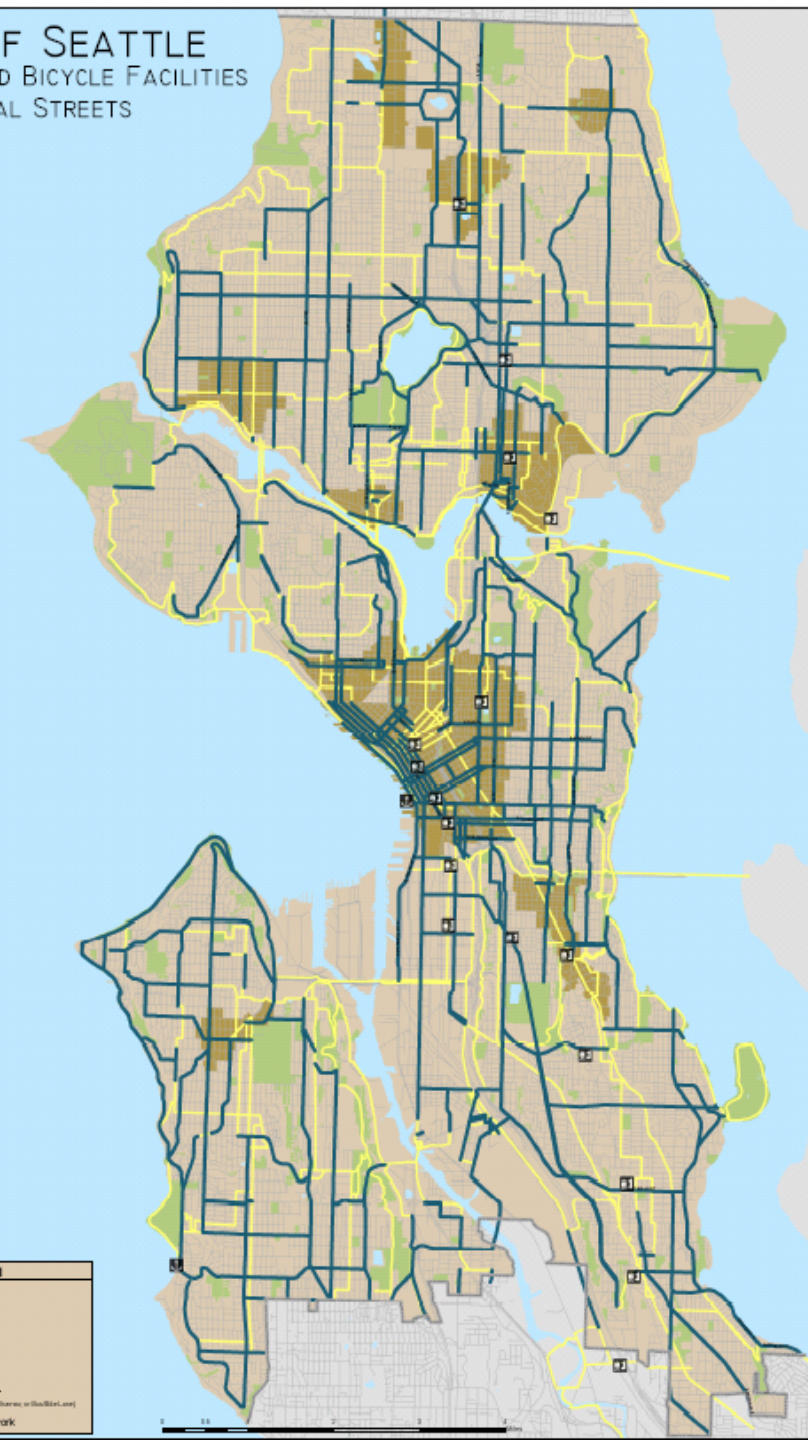
- Bicycle lanes
- Climbing lanes
- Shared lane pavement markings
- Paved shoulders

CITY OF SEATTLE
DESIGNATED BICYCLE FACILITIES
ON ARTERIAL STREETS
11/30/06



Legend

- Link Station
- Ferry Terminal
- Seattle City Limit
- Road
- Parks
- Designated Bicycle Facility
- Bicycle Lane, Climbing Lane, Shoulder, or Shared Lane
- Bicycle Facility Network



2. Bicycle Facility Network

“This trail crossing NEEDS to be made safer...A stoplight, or a stop sign plus a flashing light and some speed bumps could save lives at this crossing. PLEASE do something to make this high-traffic street a safer place for trail users to cross.”

--Seattle Resident

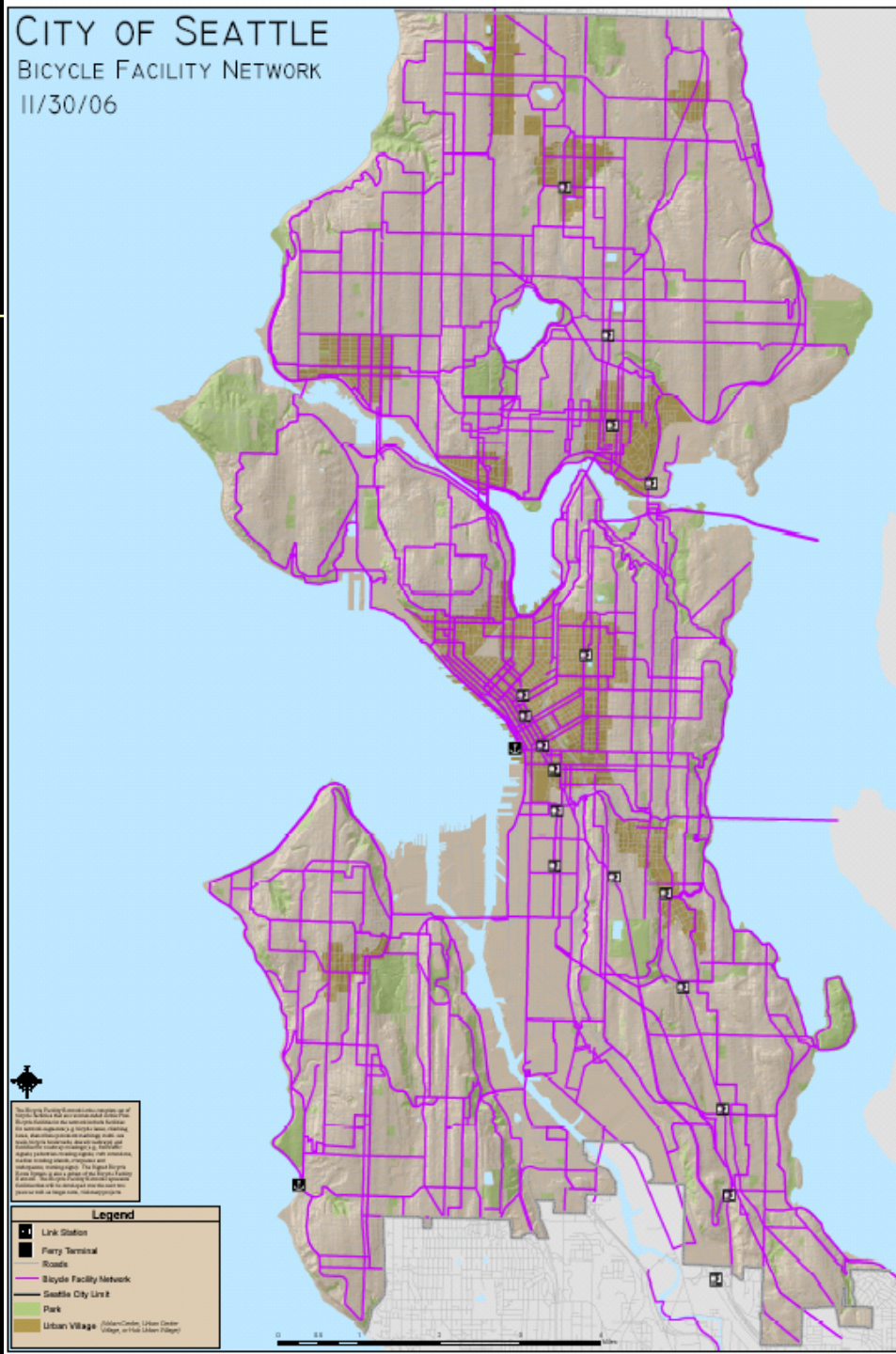
Roadway Crossing Improvements

- Full traffic signals
- Pedestrian crossing signals
- Curb extensions
- Median islands



Bicycle Facility Network

- 448 miles of facilities
- Connects all Urban Villages
- Within ¼ mile of 95% of Seattle residents
- Within ¼ mile of 97% of public schools
- Will help increase the amount of bicycling and safety of bicyclists throughout Seattle



Bicycle Facility Network

	Miles of Bicycle Facilities ¹		
<i>Facility Type</i>	<i>Existing</i>	<i>Short-Term Recommended²</i>	<i>Total Recommended³</i>
Bicycle lanes/climbing lanes	25.5	83.6	152.3
Shared lane pavement markings	0.3	59.5	108.0
Bicycle boulevards	0.0	7.6	14.0
Other on-road bicycle facilities ⁴	2.2	4.1	38.1
Signed local street connections ⁵	0.0	7.4	76.3
Multi-use trails	39.4	46.9	59.4
Other off-road bicycle facilities ⁶	0.0	0.0	0.1
TOTAL NETWORK	67.4	209.2	448.1

2. Bicycle Facility Network

“It is all well and good to create bike lanes and wide shoulders. If they are full of debris and unsafe, it’s worse than if they weren’t there...keep them clear.”

—Seattle Resident

2. Bicycle Facility Network

“Please fix roads that have parallel gaps in the pavement. There are a lot of roads that are made of cement with big gaps running parallel to traffic.”

—Seattle Resident

2. Bicycle Facility Network

“Most often cross light activation buttons cannot be reached by a person on a bike. Buttons should be placed in locations that are convenient for bicyclists to use.”

—Seattle Resident

2. Bicycle Facility Network

- Bicycle Access Improvements
 - Bicycle access through median islands/diverters
 - “Do Not Enter—Except Bicycles”
 - Pedestrian crossing signals
 - Traffic signal timing
 - Bicycle detection at actuated traffic signals
 - Bicycle detours

2. Bicycle Facility Network

- Bicycle Facility Maintenance Improvements
 - Restripe roadways
 - Fill potholes and repave streets
 - Sweep bicycle facilities and trim vegetation
 - Test actuated traffic signal sensitivity
 - Remove dangerous pole stubs
 - Fill concrete seams
 - Improve railroad crossings
 - Replace missing or damaged signs

2. Bicycle Facility Network



Seattle Bicycle Advisory Board



Seattle Bicycle Advisory Board

3. Supporting Bicycle Facilities

- Require bicycle parking, lockers, and showers in land use code
- City-Provided Bicycle Parking
- Bicycle parking at schools
- Staffed bicycle facilities



3. Supporting Bicycle Facilities

“One of the largest daily bicycle access points to Downtown Seattle is through Colman Dock—there are literally hundreds of bicyclists that use the ferry on a daily basis.”

—Seattle Resident

3. Supporting Bicycle Facilities

- Integration with Transit
 - Access to transit
 - Storage at stations
 - Accommodation on transit vehicles



4. Partnerships for Education, Enforcement, & Encouragement

“Education of cyclists and drivers is also important. Many cyclists do not ride with consideration for the traffic laws, and many motorists are not aware of how to drive safely around bicyclists.”

--Seattle Resident

4. Partnerships for Education, Enforcement, & Encouragement

- Cascade Bicycle Club
- Bicycle Alliance of Washington
- Bike Works
- Feet First
- Seattle Police Department
- Seattle Public Schools
- Seattle Parks and Recreation Department
- Puget Sound Regional Council



Supportive Programs

- Education Programs
 - Bicycle safety education in schools
 - Motorist education
 - Safe Routes to School program
 - Provide bicycle information through websites
- Enforcement Programs
 - Enforce laws that reduce bicycle crashes
 - Review and improve bicycle crash reporting
- Encouragement Programs
 - Bicycle Saturdays/Sundays
 - Commuter assistance/training for bicyclists
 - Bicycle to Work Day/Week
 - Update and distribute Seattle Bicycle Map (paper/online)

5. Implementation

“Many of us just can’t figure out why it is taking so long for safe corridors to be painted, and for programs and signage to be set in place. Trust me, hundreds of us at the meeting would have much preferred to stay home, but we’re hopeful that voicing our opinion will finally get something done...it’s taking way too long.”

--Seattle Resident

5. Implementation

- Piggybacking (repaving)
- Special bicycle projects
- Institutionalization
 - Conduct internal training (cultural change)
 - Update guidelines and procedures
 - Responsibilities for implementation
 - Plan Updates and Performance Monitoring



Questions?



Map Stations

1. Bicycle Facility Network Layers
2. North Seattle Recommendations
3. South Seattle Recommendations
4. Bicycle Route Signs
5. Comment Table

Contact Us

- Virginia Coffman, City of Seattle Bicycle and Pedestrian Program, at 206-684-3902, virginia.coffman@seattle.gov
- Bob Schneider, Toole Design Group, at 301-927-1900 x107, rschneider@tooledesign.com